WHAT IS CLAIMED IS:

1. A cam structure comprising:

a first follower section:

a first cam for displacing the first follower section in a radial direction, the first cam having divided segments defining at least three arcuate surfaces with different radiuses and sloped connection surfaces that connect the arcuate surfaces, each of the sloped connection surfaces extending in a predetermined rotation angle range that gives pressure angles in a specified range with respect to the first follower;

a second follower section that engages and rotates with the first cam, the second follower section having at least three support pins; and

a second cam that displaces the second follower section in an axial direction, the second cam having cam sections, each of the cam sections being divided in the radial direction in a number corresponding to the number of the support pins, wherein the divided cam sections are arranged in a circumferential direction at locations that time displacements in the axial direction of the second follower section with displacements in the radial direction of the first follower section.

2. A cam structure according to claim 1, wherein rotation angles of the respective arcuate surfaces of the first cam are mutually equal, and each of the cam sections of the second cam has a plane surface and sloped sections on both sides of the plane surface wherein circumferential angular widths of the plane surfaces of the respective cam sections of the second cam are mutually equal.

3. A cam structure according to claim 2, wherein circumferential angular widths of the sloped connection surfaces of the first cam are different from one another, and the second cam has bottom sections between adjacent

ones of the cam sections wherein circumferential angular widths of the bottom sections between adjacent ones of the cam sections of the second cam are different from one another.

4. A cam structure according to claim 3, wherein the support pins of the second follower section are provided at equal angular intervals of 120 degrees, and the sloped sections of the cam sections of the second cam are provided at equal angular intervals of 120 degrees, wherein each of the cam sections is divided in the radial direction into three segments, the three segments being shifted from one another in the circumferential direction to time displacements in the axial direction of the second follower section with displacements in the radial direction of the first follower section.

5. A cam structure according to claim 1, further comprising a third cam in a circular configuration with a cam radius thereof changing in stages according to rotation angles for selecting one of at least two carriages to be moved, wherein the first cam performs selection and positioning of one of the at least two carriages, the second cam displaces the second follower section in the axial direction to switch a power transmission, wherein the first cam, the second cam and the third cam are formed in one piece.

6. A cam structure according to claim 5, wherein the second cam switches the power transmission within a specified rotation angle range that is continuous with the same radius of each of at least three arcuate surfaces of the first cam, and switching of the power transmission by the second cam and the selection of the carriages are performed in a specified rotation angle range of the cam sections of a plurality of radiuses.

7. A cam structure according to claim 6, further comprising a fourth cam that operates a rotational position determination switch for

detecting operation positions of the first, second and third cams, which rotate 360 degrees, within respective rotation angles thereof.

8. A cam structure comprising:

a first cam having three arcuate surfaces with different radiuses for displacing a rotatably supported follower arm in a radial direction in three stages; and

a second cam that shifts in an axial direction a follower plate that rotates with the first cam and has three support sections, the second cam having first, second and third cam sections,

wherein each of the first, second and third cam sections of the second cam is divided in the radial direction in a number equivalent to the number of the support pins into three segments, the first, second and third cam sections being disposed in a circumferential direction such that shifts of the follower plate in the axial direction are timed with shifts in the radial direction of the follower arm.

9. A cam structure according to claim 8, wherein the three segments of each of the first, second and third cam sections are shifted from one another in the circumferential direction to time movements of the follower plate in the axial direction with movements in the radial direction of the follower arm.

10. A cam structure according to claim 9, wherein the three segments in each of the first, second and third cam sections define an inner segment, an intermediate segment and an outer segment, and the three support sections of the follower plate are disposed at different radiuses corresponding to radiuses of the inner segment, the intermediate segment and the outer segment, respectively.

11. A cam structure according to claim 10, wherein the three support sections of the follower plate are in contact with the inner segment of the first cam section, the intermediate segment in the second cam section and the outer segment of the third cam section, respectively.

12. A cam structure according to claim 11, wherein the inner segment, the intermediate segment and the outer segment in each of the first, second and third cam sections are shifted from one another in the circumferential direction.

13. A cam structure according to claim 11, wherein the three support sections of the follower plate are disposed at equal angular 1intervals of 120 degrees.

14. A cam structure according to claim 12, wherein portions on the inner segment of the first cam section, the intermediate segment in the second cam section and the outer segment of the third cam section, which are in contact with the three support sections of the follower plate, are disposed at equal angular intervals of 120 degrees.

15. A cam structure according to claim 9, wherein each of the three segments of each of the first, second and third cam sections of the second cam has a raised plane surface and sloped sections on both sides of the raised plane surface, and the second cam has bottom sections provided between adjacent ones of the first, second and third cam sections in the circumferential direction, wherein the circumferential angular widths of the bottom sections between adjacent ones of the first, second and third cam sections in the circumferential direction are different from one another.

16. A cam structure according to claim 8, further comprising a third cam with a cam radius thereof changing in stages in the circumferential direction for selecting one of at least two carriages to be moved, wherein the first cam operates to select and position one of the at least two carriages, the second cam displaces the follower plate in the axial direction to switch a power transmission, wherein the first cam, the second cam and the third cam are formed in one piece.

17. A cam structure according to claim 16, wherein the second cam switches the power transmission within a specified rotation angle range that is continuous with the same radius of each of the three arcuate surfaces of the first cam, and switching of the power transmission by the second cam and the selection of the carriages are performed in a specified rotation angle range of each of the first, second and third cam sections of a plurality of radiuses.

18. A cam structure according to claim 17, further comprising a fourth cam that operates a rotational position determination switch for detecting operation positions of the first, second and third cams within respective rotation angles thereof.

19. A cam structure according to claim 12, wherein portions on the inner segment of the first cam section, the intermediate segment in the second cam section and the outer segment of the third cam section, which are in contact with the three support sections of the follower plate, are disposed at equal angular intervals of 120 degrees.

20. A cam structure according to claim 9, wherein the three segments in each of the first, second and third cam sections define an inner segment, an intermediate segment and an outer segment, the three support

sections of the follower plate are disposed at different radiuses corresponding to radiuses of the inner segment, the intermediate segment and the outer segment, respectively, and are in contact with portions on the inner segment of the first cam section, the intermediate segment in the second cam section and the outer segment of the third cam section.

21. A cam structure according to claim 20, wherein the first cam includes sloped connection surfaces that connect the three arcuate surfaces of the first cam, and the second cam has bottom sections between adjacent ones of the first, second and third cam sections, wherein circumferential angular widths of the three arcuate surfaces of the first cam are mutually equal, circumferential angular widths of the sloped connection surfaces of the first cam are different from one another, and circumferential angular widths of the bottom sections between adjacent ones of the first, second and third cam sections of the second cam are different from one another.

22. A disk exchange system comprising:

a first cam having at least three arcuate surfaces with different radiuses for displacing a rotatably supported follower arm in a radial direction in three stages;

a second cam that shifts in an axial direction a follower plate that rotates with the first cam and has three support sections, the second cam having at least three cam sections,

wherein each of the cam sections of the second cam is divided in the radial direction in a number equivalent to the number of the support pins, the plurality of cam sections being disposed in a circumferential direction such that shifts of the follower plate in the axial direction are timed with shifts in the radial direction of the follower arm;

a selector system that selects one of carriages according to displacement positions of the follower arm; and

a rotation transmission switching system that switches a rotational power transmission by up and down movements of the follower plate.